

WHAT IS CLAIMED IS:

1                    1.        A system for wirelessly activating an appliance, the appliance  
2        responding to one of a plurality of transmission schemes, the system comprising:  
3                    a transmitter operative to transmit a radio frequency activation signal;  
4                    at least one user activation input, each activation input identifying a  
5        channel;  
6                    a programming input;  
7                    memory holding data describing a plurality of rolling code  
8        transmission schemes associated with a rolling code mode and a plurality of fixed  
9        code transmission schemes, at least one fixed code transmission scheme associated  
10       with each of at least one fixed code mode; and  
11                  control logic in communication with the transmitter, the at least one  
12       user activation input, the programming input and the memory, for each channel the  
13       control logic maintaining a channel mode set initially to a rolling code mode, the  
14       channel mode changing to one of the at least one fixed code mode if the channel is  
15       trained to a fixed code received from the programming input, the control logic in  
16       response to an assertion of the user activation input associated with the channel  
17       generating and transmitting an activation signal based on each transmission scheme  
18       associated with the mode maintained for the channel.

1                    2.        The system of claim 1 wherein the at least one fixed code  
2        mode is a single fixed code mode.

1                    3.        The system of claim 1 wherein the at least one fixed code  
2        mode is a plurality of fixed code modes.

1                    4.        The system of claim 3 wherein the fixed code has a code size  
2        and wherein the control logic determines the fixed code channel mode based on the  
3        code size of the fixed code.

1                    5.        The system of claim 3 wherein the control logic determines  
2 the channel mode as one of the fixed code modes through guess-and-test user  
3 interaction.

1                    6.        The system of claim 1 wherein the channel mode may be reset  
2 to rolling code mode.

1                    7.        The system of claim 1 further comprising a data port operative  
2 to download data describing at least one scheme into the memory.

1                    8.        The system of claim 1 wherein the control logic generates and  
2 transmits activation signals based on a popularity of schemes, thereby reducing an  
3 average activation latency time.

1                    9.        The system of claim 1 wherein the memory holds a different  
2 counter value for each of the plurality of rolling code transmission schemes.

1                    10.      The system of claim 1 wherein the at least one activation input  
2 is a plurality of activation inputs.

1                    11.      The system of claim 10 wherein each of the plurality of  
2 activation inputs comprises a switch and the user programming input comprises the  
3 same plurality of switches.

1                    12.      The system of claim 1 wherein the fixed code is parallelly  
2 received.

1                    13.      The system of claim 1 wherein the fixed code is serially  
2 received.

1                    14.      The system of claim 1 wherein, in response to an assertion of  
2 the user activation input, at least one pair of fixed code activation signals based on

3 the same fixed code transmission scheme is transmitted, one fixed code activation  
4 signal in each pair based on a reversal of the fixed code.

1 15. The system of claim 1 wherein, in response to an assertion of  
2 the user activation input, at least one pair of fixed code activation signals based on  
3 the same fixed code transmission scheme is transmitted, one fixed code activation  
4 signal in each pair based on an inverse of the fixed code.

1 16. A method of controlling an appliance activated by a radio  
2 frequency activation signal described by a transmission scheme, the transmission  
3 scheme one of a plurality of possible transmission schemes including a plurality of  
4 rolling code transmission schemes and a plurality of fixed code transmission  
5 schemes, the method comprising:  
6 establishing a mode as rolling mode;  
7 if user input indicating a fixed code appliance is entered, receiving  
8 a fixed code from the user, storing the received fixed code and changing the mode  
9 to fixed mode;  
10 receiving an activation request from a user;  
11 if the mode is rolling mode, generating and transmitting a sequence  
12 of rolling code activation signals, each activation signal based on one of the plurality  
13 of rolling code transmission schemes; and  
14 if the mode is fixed mode, generating and transmitting at least one  
15 activation signal, each of the at least one activation signal based on one of the  
16 plurality of fixed code transmission schemes, each of the at least one activation  
17 signal including the stored fixed code.

1 17. The method of claim 16 wherein the at least one transmitted  
2 fixed code activation signal is a plurality of fixed code activation signals.

1 18. The method of claim 16 wherein each of a subset of the  
2 plurality of fixed code transmission schemes is used to generate at least one of the  
3 plurality of fixed code activation signals.

1                    19.     The method of claim 18 wherein membership in the subset is  
2     based on a size of the stored fixed code.

1                    20.     The method of claim 18 wherein the subset is determined from  
2     a plurality of subsets by user guess-and-test interaction.

1                    21.     The method of claim 16 wherein, if user input indicating a  
2     fixed code appliance is entered, a sequence of different fixed code activation signals  
3     is transmitted, each transmitted signal based on the received fixed code, until user  
4     input indicates activation of the appliance.

1                    22.     The method of claim 16 further comprising resetting the mode  
2     to rolling mode based on user input.

1                    23.     The method of claim 16 further comprising learning at least  
2     one transmission scheme through a data port.

1                    24.     The method of claim 16 wherein an order in the sequence of  
2     rolling code activation signals is established based on the popularity of each of the  
3     rolling code transmission schemes.

1                    25.     The method of claim 16 wherein each rolling code  
2     transmission scheme includes a separate counter value, each counter value used to  
3     generate a rolling code value.

1                    26.     A method of activating a remotely controlled appliance, the  
2     appliance responding to an activation signal based on at least one of a plurality of  
3     activation schemes, the method comprising:  
4                    receiving an assertion of one of at least one activation input;  
5                    determining if the asserted activation input is associated with a  
6     programmed fixed code; and

7                   if the asserted activation input is not associated with a programmed  
8 fixed code, transmitting a plurality of different rolling code activation signals each  
9 based on a different rolling code activation scheme.

1                   27.     The method of claim 26 wherein, if the asserted activation  
2 input is associated with a programmed fixed code, transmitting a plurality of  
3 different fixed code activation signals each based on one of a plurality of fixed code  
4 activation schemes.

1                   28.     The method of claim 26 further comprising determining which  
2 one of a plurality of fixed code activation signals activates the appliance by  
3 transmitting a sequence of different fixed code activation signals until user input  
4 indicates success in activating the appliance.

1                   29.     The method of claim 26 further comprising determining which  
2 subset of a plurality of fixed code activation signals activates the appliance by  
3 transmitting a sequence of different fixed code activation signals until user input  
4 indicates success in activating the appliance.

1                   30.     The method of claim 26 wherein each of the plurality of  
2 different rolling code activation signals is based on a different counter value.

1                   31.     The method of claim 26 further comprising modifying the  
2 plurality of rolling code activation schemes based on data received from a data port.

1                   32.     The method of claim 26 wherein the programmed fixed code  
2 is manually entered by a user.

1                   33.     The method of claim 26 wherein the plurality of different  
2 rolling code activation signals are transmitted in an order based on popularity of  
3 each rolling code activation scheme.